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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,282	09/26/2006	Hirotoishi Ishii	295727US0PCT	6171
22850	7590	12/28/2009	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			LEE, SIN J	
			ART UNIT	PAPER NUMBER
			1795	
			NOTIFICATION DATE	DELIVERY MODE
			12/28/2009	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/594,282	<b>Applicant(s)</b> ISHII ET AL.	
	<b>Examiner</b> Sin J. Lee	<b>Art Unit</b> 1795	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 September 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 18-23,33-36 and 38-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-23,33-36 and 38-61 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

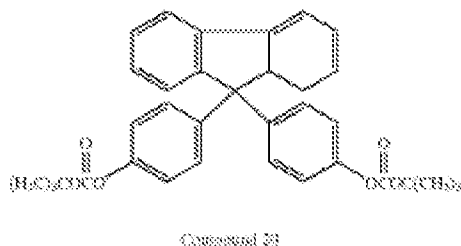
1. In view of the amendment, previous 102(b) and 103(a) rejection over Nakayama et al (Bulletin of the Chemical Society of Japan), previous 103(a) rejection over Hanabata et al'421 and previous 103(a) rejection over Aoso (JP'193) are hereby withdrawn.

2. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

3. Claims 54 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanabata et al (US 2003/0211421 A1) in view of Yamada et al (US 2003/0099900 A1).

Hanabata teaches the following compound in Example 20;



This compound teaches present compound of formula (2) of claim 54 (present l being 0, present m and n are 1 each, present Y and Z being single bonds and present C and D being  $-(CH_2)_s-P-(O-C(=O)-O-Q)_r$ , in which s is 0, P is an aromatic group of 6 carbon atoms, Q is t-butyl group (which is an organic group having 4 carbon atoms) and r is 1.

In Example 122 (see Table 1 and [0648]), Hanabata teaches a positive resist composition containing photosensitive resin 1 (which contains polyvinylphenol resin in which 35 mol% of hydroxyl groups are protected by 1-ethoxyethoxy group, polyvinylphenol resin in which 37 mol% of hydroxyl groups are substituted with t-butoxycarbonyloxy) group, an acid generator and a solvent) and the compound of Example 20 shown above.

Although Hanabata does not teach present quenching agent of claim 54, it is known in the art, as evidenced by Yamada, [0078], that adding a quencher in a resist composition improves deterioration in abilities due to deactivation of an acid following leaving after exposure. It would have been obvious to one skilled in the art to add a quencher in Hanabata's composition in order to improve deterioration in abilities due to deactivation of an acid following leaving after exposure as taught by Yamada. Thus, Hanabata in view of Yamada renders obvious present inventions of claims 54 and 55 (since Hanabata teaches present compound of formula (2) of claim 54, and since

*present limitation " . . . organic compound shown by formula (2), obtained by washing with an acidic aqueous solution and processing with " an ion-exchange resin" is written in product-by-process claim language, it is the Examiner's position that Hanabata teaches present compound of formula (2) obtained by washing with an acidic aqueous solution and processing with an ion-exchange resin. It is also the Examiner's position that since Hanabata's compound teaches present compound of formula (2), his compound would inherently be in an amorphous state at room temperature and have an average diameter of the molecule being 2 nm or less).*

4. Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hanabata et al (US 2003/0211421 A1) in view of Yamada et al (US 2003/0099900 A1) as applied to claim 54 above, and further in view of Aoai et al (5,683,856).

Hanabata in view of Yamada is discussed above. Hanabata does not explicitly state present basic impurity content. However, it is commonly known in the art that basic impurities tend to deactivate acids generated from photoacid generators thus causing a change in sensitivity and profile or line width of resist pattern as evidenced by Aoai (see col.2, lines 65-67, col.3, lines 2-10). Thus, one skilled in the art would have been motivated to keep the basic impurities content in Hanabata's composition as low as possible so as to prevent change in sensitivity and profile or line width or resist pattern, and the present range of 10 ppm or less would have been obvious to one skilled in the art at the time the invention was made since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Thus, Hanabata in

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view of Yamada and further in view of Aoai renders obvious present invention of claim 57.

### ***Double Patenting***

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 18-23, 33-36 and 38-61 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3-6, 25 and 26 of copending Application No. 10/531,208 in view of Kinsho et al (US 2003/0008232 A1).

The photoresist base material of claim 5 (see also claims 4 and 6) of App.’208 teaches present inventions of claims 35 and 38 except for the photoacid (or photobase) generator and a quenching agent. However, it is known in the art that a photoresist composition typically contains a base resin, a photoacid generator as well as a basic

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compound, as evidenced by Kinsho (see [0054] and [0058]). It would have been obvious to one skilled in the art to include such components into the photoresist material of claim 5 of App.'208 with a reasonable expectation of success. Thus, App.'208 in view of Kinsho renders obvious present inventions of claims 35-42.

The photoresist base material of claim 25 (see also claim 6) of App.'208 teaches present compositions of claims 43-49 except for the photoacid (or photobase) generator and a quenching agent. However, it is known in the art that a photoresist composition typically contains a base resin, a photoacid generator as well as a basic compound, as evidenced by Kinsho (see [0054] and [0058]). It would have been obvious to one skilled in the art to include such components into the photoresist material of claim 25 of App.'208 with a reasonable expectation of success. Thus, App.'208 in view of Kinsho renders obvious present inventions of claims 43-49.

Also, Claims 1 and 3 of App.'208 in view of Kinsho render obvious present inventions of claims 50-61.

Also, Claim 26 of App.'208 teaches a photoresist composition containing present calixresorcinarene compound of present claim 18 (present R being the organic group of formula  $-\text{CH}_2-\text{C}_6\text{H}_5-\text{O}-\text{CH}_2-\text{C}(=\text{O})-\text{O}-\text{t-butyl}$ ) because B,C and D of claim 26 of App.'208 can be  $\text{AR}-\text{CH}_2-$ , in which Ar is a phenyl group substituted with  $-\text{OR}$ , with the R group being t-butyloxycarbonylmethyl group. As discussed above, as evidenced by Kinsho (see [0054] and [0058]), it is known in the art that a photoresist composition typically contains a base resin, a photoacid generator as well as a basic compound,. It would have been obvious to one skilled in the art to include such components into the

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photoresist material of claim 26 of App.'208 with a reasonable expectation of success. Kinsho also shows that a photoresist material is typically used in lithography process to produce a semiconductor device (see [0002]-[0003]). It would have been obvious to one skilled in the art to use the photoresist material of claim 26 of Ap.'208 in lithography process to produce a semiconductor device with a reasonable expectation of success. Thus, App.'208 in view of Kinsho renders obvious present inventions of claims 18, 20-23, 33 and 34.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should



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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sin J. Lee/

Primary Examiner, Art Unit 1795

December 20, 2009